

CLAIMS

1. A method for controlling an operation of a wiper by directing light emitted from a light emitting element to a detection area provided at a part of a wiper wiping region of a vehicular windshield glass, receiving light reflected on the detection area by a photo detector, and detecting a state of the detection area, comprising the steps of:

(a) detecting the amount of water passing through the detection area, with the water being carried by wiping operation of the wiper and;

(b) detecting an impact of a raindrop on the detection area;

(c) judging whether or not the amount of water passing through the detection area is not smaller than a predetermined threshold value;

(d) judging whether or not the impact of the raindrop on the detection area is detected if the amount of water passing through the detection area is not smaller than the predetermined threshold value; and

(e) carrying out control to decrease frequency of wiping operation of the wiper if the impact of the raindrop on the detection area is not detected.

2. The wiper control method according to claim 1, wherein when a judgment result that the amount of water passing through the detection area is not smaller than the predetermined threshold value and the impact of the raindrop on the detection area is not detected continues a plurality

of times, control is carried out to decrease the frequency of wiping operation of the wiper.

3. The wiper control method according to claim 1 or 2, wherein when the wiper operates at a high wiping speed, the control to decrease the frequency of wiping operation of the wiper is control to switch over the wiping speed to a lower speed.

4. The wiper control method according to claim 1 or 2, wherein when the wiper operates in a continuous mode, the control to decrease the frequency of wiping operation of the wiper is control to switch over the mode to an intermittent mode.

5. The wiper control method according to claim 1 or 2, wherein when the wiper operates in an intermittent mode, the control to decrease the frequency of wiping operation of the wiper is control to switch over the period of wiping operation to a longer period.

6. The wiper control method according to claim 1 or 2, wherein when the wiper operates in an intermittent mode, the control to decrease the frequency of wiping operation of the wiper is control to switch over the state to a waiting state.

7. The wiper control method according to claim 1 or 2, wherein when the wiper operates in an intermittent mode, the predetermined threshold value is changed according to the period of wiping operation of the wiper.

8. A device for controlling an operation of a wiper by directing light emitted from a light emitting element to a

detection area provided at a part of a wiper wiping region of a vehicular windshield glass, receiving light reflected on the detection area by a photo detector, and detecting a state of the detection area, comprising:

a wiping frequency switching-over means, the wiping frequency switching-over means comprising:

means for receiving as inputs a detection result of the amount of water passing through the detection area, with the water being carried by wiping operation of the wiper, and a detection result of an impact of a raindrop on the detection area;

means for judging whether or not the amount of water passing through the detection area is not smaller than a predetermined threshold value;

means for judging whether or not the impact of the raindrop on the detection area is detected if the amount of water passing through the detection area is not smaller than the predetermined threshold value; and

means for carrying out control to decrease frequency of wiping operation of the wiper if the impact of the raindrop on the detection area is not detected.

9. The wiper control device according to claim 8, wherein, the wiping frequency switching-over means further comprising means for carrying out control to decrease the frequency of wiping operation of the wiper, when a judgment result that the amount of water passing through the detection area is not smaller than the predetermined

threshold value and the impact of the raindrop on the detection area is not detected continues a plurality of times.